

**REMARKS**

No new matter has been added.

The Office Action mailed September 7, 2006, along with the Advisory Action and Notice of Non-Compliant Amendment, have been received and reviewed. Claims 1 through 22 are currently pending in the application. Claims 23 through 26 have been canceled herein. Claims 1 through 22 stand rejected. Applicants propose to amend claims 1, 4, 7, 9, 11, 16 and 20, and respectfully request reconsideration of the application as proposed to be amended herein.

**35 U.S.C. § 112 Specification Objections**

The specification is objected to as being “replete with terms which are not clear, concise and exact.” The specification has been amended and corrected herein, as required by the Examiner. Therefore, Applicants respectfully request the objections to the specification be withdrawn.

The Office Action alleges:

[t]he specification is replete with terms, which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

- (5) in [0038] line 5, “Design feature 66 ultimately corresponds to elements” should be corrected to –Design features 66 ultimately correspond[[s]] to elements--;
- (6) in [0038] line 8, “a radius about the feature” should be changed to –a radius ~~about the~~ around each feature--, in order to better correspond to e.g., [0039] lines 2-3, etc. and the instant claims as currently amended (e.g., instant claim 1 line 5, etc.); and
- (7) similar further changes should also be made throughout the specification wherever appropriate. (Office Action, p. 4).

Applicants have amended the specification accordingly to comply with the requirement of 35 U.S.C. 112, first paragraph, and the amendments contain no new matter.

Specifically, Applicants have amended the specification as suggested in the Office Action. FIG. 10 and paragraphs [0038-0039] provide support for the amendments to the specification at paragraphs [0038]. Accordingly, no new matter has been added and Applicants respectfully request the objections be withdrawn.

**Claim Objections**

Claims 4, 11, and 12 have been objected to because of writing “informalities.” Such claims have been amended and corrected herein, as required by the Examiner. Therefore, Applicants respectfully request the objections to the claims be withdrawn.

The Office Action alleges:

Claims 4 and 11-12 are objected to because of the following informalities:

- (vi) in claim 4 line 2, “forming at least one sidelobe inhibitor” should be changed to – forming the at least one sidelobe inhibitor—that finds antecedent basis in the “at least one sidelobe inhibitor” recited in claim 1 line 8 (on which claim 4 depends);
- (vii) in claim 11 line 4, the phrase “when one or more sidelobe inhibitors are” should be changed to –when ~~one or more~~ the at least one other of the sidelobe inhibitors [[are]] is--, in order to correspond with this latter phrase recited earlier in claim 11 lines 2-3; and
- (viii) similarly in claim 11 line 6, “the one or more sidelobe inhibitors” should be corrected to –the first one or more of the sidelobe inhibitors and the at least one other of the sidelobe inhibitors--.

Claim 12 depends on claim 11. (Office Action, pp. 4-5).

Applicants have amended claims 4 and 11 to correct any antecedent basis discrepancies. Accordingly, Applicants respectfully request the objection to claims 4, 11 and 12 be withdrawn.

### **35 U.S.C. § 112 Claim Rejections**

#### **First Paragraph**

Claims 8, 9, 11, and 12 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

**Regarding claim 8 and claim 9** depending therefrom, the Office Action rejects claim 8 under 35 U.S.C. § 112, first paragraph, because the claim 8 recites the claim limitation of a “centroid”, however, the Office Action alleges the mathematical description of “centroid” is not found to be adequately supported in the specification. (Office Action, p. 6).

While the specification of the above-referenced application does not explicitly recite the term “centroid” as recited in claim 8, one of ordinary skill in the art would readily understand

such a terminology from the specification and the graphical illustrations in the Figures describing relationships of circles, etc.. The Office Action states, “a “centroid” of the mathematical description of one of the elements (66 in Figure 10) is not found to be adequately supported in the specification.” (Office Action, p. 6). Applicants respectfully disagree. Regarding Applicants’ use of the term “centroid,” the term is a common term used to identify a center of area/mass location within a geometric shape, generally irregular geometric shapes. Applicants’ various figures illustrate “centroids” with respect to circles and are more commonly known as “centers” for a symmetrical geometric shape. However, for non symmetric shapes, the concept of “centroid” takes into consideration the distribution of area in the calculation of such a “center.”

Specifically, the Merriam-Webster Online dictionary at the following link, <http://www.m-w.com/dictionary/centroid>, contains the following “plain meaning” definition on which the Applicants rely, namely:

centroid

1 : center of mass;

2 : a point whose coordinates are the averages of the corresponding coordinates of a given set of points and which for a given plane or three-dimensional figure (as a triangle or sphere) corresponds to the center of mass of a thin plate of uniform thickness and consistency or a body of uniform consistency having the same boundary.

Applicants respectfully request that the term at least be given its “ordinary meaning” and the understanding of the term as is know by those of ordinary skill in the art.

Accordingly, Applicants respectfully assert that claim 8 complies with the enablement requirement of 35 U.S.C. § 112, first paragraph, and request the 35 U.S.C. § 112, first paragraph, rejection of claim 8 and claim 9 depending therefrom be withdrawn.

**Regarding claim 11 and claim 12** depending therefrom, the Office Action rejects claim 11 under 35 U.S.C. § 112, first paragraph, because the claim 11 recites the claim limitation of a “more proximate than a predefined threshold” with regard to the proximity of two or more

sidelobe inhibitors (77 in Figure 10) is also not sufficiently enabled by the specification. (Office Action, p. 6).

Applicants have amended claim 11 to recite “an overlap region” instead of “a predefined threshold”. The term “an overlap region” finds support in the specification at least in paragraphs [0042-0043] and FIGS. 12 and 12A.

Accordingly, Applicants respectfully assert that claim 11 complies with the enablement requirement of 35 U.S.C. § 112, first paragraph, and request the 35 U.S.C. § 112, first paragraph, rejection of claim 11 and claim 12 depending therefrom be withdrawn.

#### Second Paragraph

Claims 1 through 14, 16, and 20 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully traverse these rejections, as hereinafter set forth.

#### Claims 1-14

The Office Action recites:

In claim 1 line 4 and in claim 7 lines 4-5, the phrase “to create desired patterns **and** resultant sidelobes” (emphasis in original) seems to suggest creating desired sidelobes that does not correspond with either (A) the earlier state intention for mitigating sidelobe artifacts (in claim 1 line 1) by forming at least on sidelobe inhibitor (in claim 1 line 8) nor (B) the recited generating of sidelobe inhibitors (in claim 7 line 1) of the forming of at least one sidelobe inhibitor (in claim 7 line 12). For the purpose of this Office action, the above phrase in claim 1 line 4 has been interpreted to mean –to create desired patterns and resultant mitigated sidelobes—and the above phrase in claim 7 lines 4-5 has been interpreted to mean—to create desired patterns and resultant inhibited sidelobes--.. (Office Action, p. 7)

Applicants have amended independent claim 1, with claims 2-6 depending therefrom, and independent claim 7, with claims 8-14 depending therefrom, to recite “resultant mitigated sidelobes” as suggested for claim 1. Accordingly, Applicants respectfully request the rejections be withdrawn.

#### Claim 4

The Office Action recites:

In claim 4 lines 3 and 5-6, it is unclear whether “an overlap range” (in line 3) and “an overlapping area” (in each of lines 5-6) were intended to be (3) an overlap range (or an overlapping area) of adjacent diffraction rings 70 shown in Figure 10 as described in [0039] lines 5-8 or (4) a guard ring (102 or 104) extending around each of the plurality of locations (92 and 94) shown in Figure 12A as describe in [0042] such that a portion of an overlapping area or guard ring from one of the locations is common or overlaps with a portion of another overlapping area or guard ring from another one of the locations. For the purpose of this Office action, “an overlap range” in claim 4 line 3 has been interpreted to mean ~~an overlap range~~ a guard ring—and “an overlapping area” in claim 4 at each of lines 5-6 have been interpreted to mean ~~an overlapping area~~ the guard ring—(in claim 4 at each of lines 5-6), in accordance with (4) above.

Also for the purpose of this Office action, the phrase “the locations” in claim 4 at each of lines 4-7 have been interpreted (at all four occurrences) as being corrected to the plurality of locations—, in order to better correspond with the antecedent basis for this phrase “plurality of locations” found in claim 4 line 2. (Office Action, pp. 7-8)

Applicants have amended claim 4 to recite “guard rings” and “plurality of locations” as requested by the Examiner. Accordingly, Applicants respectfully request the rejections be withdrawn.

#### Claim 16

The Office Action recites:

Similar problems still remain in claim 16 with “an overlap range” (in claim 16 line 3), “the intersections” (at all five occurrences in each of lines 3-7 in claim 16), and “an overlapping area” (at both occurrences in claim 16 lines 4-5 and 5-6). In order to address these similar problems found in claim 16 (in relation to those in claim 4 as mentioned above), claim 16 lines 3-8 have been interpreted as follows: --defining ~~an overlap range~~ a guard ring extending around each of the plurality of intersections; defining a common intersection in lieu of each of the plurality of intersections when a portion of ~~an overlap range~~ the guard ring extending from one of the plurality of intersections in common with a portion of ~~an overlap range~~ the guard ring extending from another one of the plurality of intersections; and forming a sidelobe inhibitor[[s]] across at least a portion of each of the plurality of intersections [[and]] or across the common intersection--. (Office Action, p. 8)

Applicants respectfully assert that many of the Examiner's recommendations were previously amended into Applicants' claim 16. Applicants herein further amend claim 16 to include other various ones of the proposed recommendations. Accordingly, Applicants respectfully request the rejections be withdrawn.

Claim 4

The Office Action recites:

Also in claim 4 at lines 8-9, the phrase "common locations" (plural) is still not consistent with the previous recitation of a single common location in claim 4 at line 4 (as previously pointed out and not addressed by Applicants). For the purpose of this Office action, the above phrase in claim 4 lines 8-9 has been interpreted to mean –common location[[s]]—(singular). (Office Action, p. 8)

Applicants have amended claim 4 as recommended and requested by the Examiner. Accordingly, Applicants respectfully request the rejections be withdrawn.

Claim 9

The Office Action recites:

In claim 9 lines 1-2, the phrase "the mathematical description of diffraction ring" (singular) does not correspond with the immediately preceding antecedent basis for this phrase found in claim 8 lines 1-2 (which is in plural form). However, for the purpose of this Office action and in order to advance the prosecution of this application, the above phrase in claim 9 lines 1-2 has again been interpreted to mean –the mathematical descriptions of diffraction rings—(plural). (Office Action, pp. 8-9)

Applicants have amended claim 9 as recommended and requested by the Examiner. Accordingly, Applicants respectfully request the rejections be withdrawn.

Claim 9

The Office Action recites:

In claims 11-12, it is still uncertain whether the "predefined threshold" (found in claim 11 lines 4-5 and claim 12 lines 1-2) with regard to the proximity of two or more sidelobe inhibitors (77 in Figure 10) is meant to be measure (5) between the closes outer edges, (6) between the centers of the "more proximate" sidelobe inhibitors, or (7) on

some other basis, so that the “predefined threshold” for the proximity is about half to about one of the defined wavelength of radiation (claim 12,  $\sim\lambda/2$  to  $\sim\lambda$ ). For the purpose of this Office action and in order to afford the broadest reasonable interpretation to claims 11-12, the “predefined threshold” has been interpreted to mean either (5) or (6) as set forth above. Applicants must clarify the record on this issue. (Office Action, p. 9)

Applicants have amended claim 11 to delete the term “predefined threshold.”

Accordingly, Applicants respectfully request the rejections be withdrawn.

#### Claim 20

The Office Action recites:

In claim 20, the recitation of separate “identifying” steps (in lines 2, 3, and 5) is still not fully clear about the differentiation or specific meaning of each of the latter two steps (in lines 3 and 5) with respect to the “identifying the intersect” in claim 19 line 8 (on which claim 20 depends). For the purpose of this Office action, these latter two “identifying” steps in claim 20 lines 3 and 5 have been further interpreted to be clarified as follows: (b) in line 3, “identifying ones of intersects” has been interpreted to mean – first identifying identification of ones of one intersect[[s]]--; and (c) in line 5, “identifying a common intersect in lieu of intersects resulting in overlap” has been interpreted to mean – second identifying identification of a common intersect intersect, in lieu of intersects resulting in overlap overlap--. (Office Action, p. 9)

Applicants have amended claim 20 to include various recommendations by the Examiner.

Accordingly, Applicants respectfully request the rejections be withdrawn.

#### **35 U.S.C. § 102(b) Anticipation/35 U.S.C. § 103(a) Obviousness Rejections**

##### Anticipation/Obviousness Rejection Based on U.S. Patent No. 5,700,601 to Hasegawa et al.

Claims 1 through 3, 5 through 10, 13 through 15, 17 through 19, 21, and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over Hasegawa et al. (U.S. Patent No. 5,700,601). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention

must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 102(b) anticipation rejections of claims 1 through 3, 5 through 10, 13 through 15, 17 through 19, 21, and 22 are improper because the cited reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims. Since the Hasegawa reference does not describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims, the Hasegawa reference cannot anticipate under 35 U.S.C. § 102 the presently claimed invention of independent claim 1, and claims 2, 3, 5 and 6 depending therefrom, independent claim 7, and claims 8-10, 13 and 14 depending therefrom, independent claim 15, and claims 17 and 18 depending therefrom, and independent claim 19, and claims 21 and 22 depending therefrom.

The alternative 35 U.S.C. § 103(a) obviousness rejections of claims 1 through 3, 5 through 10, 13 through 15, 17 through 19, 21, and 22 are improper because the elements for a *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Applicants' independent claims 1, 7, and 15, as presently amended, and claim 19, recite:

1. A method for mitigating sidelobe artifacts in a radiation-patterning tool design process, comprising:  
defining elements to be formed in a radiation-patterning tool ...;  
calculating a diffraction ring ...;  
***identifying at least one location where one diffraction ring from one of the elements intersects another diffraction ring from another of the elements;*** and



***forming at least one sidelobe inhibitor across the at least one location***, the sidelobe inhibitor being located to pass radiation in phase with the radiation passing through the elements. (Emphasis added.)

7. A method of generating sidelobe inhibitors on a radiation-patterning tool, comprising:  
defining elements to be formed in a radiation-patterning tool ...;  
forming a mathematical description ...;  
defining a mathematical description ...;

***identifying mathematical descriptions of locations where one mathematical description of a diffraction ring of one of the elements intersects another mathematical description of a diffraction ring of another of the elements***; and

***forming at least one sidelobe inhibitor on the radiation-patterning tool at one of the mathematical descriptions of locations***, the at least one sidelobe inhibitor being located to pass radiation in phase with the radiation passing through the elements. (Emphasis added.)

15. A method for designing a mask for illuminating a pattern, comprising:  
defining elements to be formed in the mask;  
calculating a diffraction ring ...; and

***forming a sidelobe inhibitor across at least one intersection where a diffraction ring from one of the elements intersects a diffraction ring from another of the elements***, the sidelobe inhibitor being located to pass radiation in phase with the radiation passing through the elements. (Emphasis added.)

19. A computer-readable medium having computer-executable instructions thereon for determining the placement of sidelobe inhibitors relative to elements to be formed on a radiation-patterning tool, comprising:

calculating a diffraction ring ...;

calculating an intersect of a first diffraction ring with another of the diffraction rings; and

***identifying the intersect as a location to place one of the sidelobe inhibitors, each of the sidelobe inhibitors being located to pass radiation in phase with the radiation passing through the elements***. (Emphasis added.)

Applicants' invention as presently claimed in independent claims 1, 7, 15, and 19, and respective claims 2, 3, 5, 6, 8-10, 13, 14, 17, 18, 21, and 22 depending therefrom, recites "***identifying ... location where one diffraction ring ... intersects another diffraction ring ... and forming at least one sidelobe inhibitor ... at ... the ... location ...***" or "***forming a sidelobe inhibitor across at least one intersection where a diffraction ring from one of the elements intersects a diffraction ring from another ...***" or "***identifying the intersect as a location to***

*place one of the sidelobe inhibitors, each of the sidelobe inhibitors being located to pass radiation in phase with the radiation passing through the elements”.*

The Office Action states:

The auxiliary patterns or sidelobe inhibitors are either continuous (5 as shown in Figure 3) or separated into plural elements (9 as shown in Figures 9-10) ... [with] [f]igures 16(b) and 17 in embodiment 8 show the effect of auxiliary sidelobe inhibitor square patterns with two closely spaced square main patterns .... (Office Action, p. 11, lines 8-12).

Embodiment 5 describes the use of a computer system and associated data file unit (understood to necessarily include a computer-readable medium having computer-executable instructions and//or similar other *means for calculating intersections of diffraction rings* around each element) ... *which is believed to be inherently or obviously capable of* performing the necessary calculations for *defining main pattern elements* and mathematical descriptions of associated diffraction rings or even guard rings, ... *and the intersections* thereof for determining the placement locations of plural auxiliary sidelobe inhibitor patterns .... (Office Action, p. 11, line 19-p. 12, line 6; emphasis added.)

Applicants respectfully assert that the standards for anticipation under 35 U.S.C. §102 require the cited reference to describe, either expressly or inherently, the identical inventions in as complete detail as are contained in the claims. Furthermore, the standard for prima facie case of obviousness under 35 U.S.C. §103 requires that the prior art reference must teach or suggest all the claims limitations.

In the present rejections, an assertion that a reference is “understood to necessarily include” or that an element is “believed to be ... capable of” does not meet the legal standards. Accordingly, Applicants respectfully direct the attention to the actual disclosure, teaching and suggestions of the Hasegawa reference. The Hasegawa reference specifically recites:

Actually, as shown in FIG. 12(a), the main patterns are sometimes arranged to be closed to each other. In this case, the temporarily disposed positions 12 are possibly overlapped to each other or an auxiliary pattern possibly projects in an area separated from the adjacent main pattern by a distance less than the distance D, thus generating a contradiction portion 13. Such a contradiction portion 13 is judged. At the step S5, the contradiction portion 13 is eliminated. The corner portions between the auxiliary patterns are also eliminated. (Hasegawa, col. 24, lines 37-47.)

FIG. 16(b) is a plan view of an inventive photomask. In each of the cases, two pieces of square-shaped transparent main patterns 4 were disposed in parallel to each other .... (Hasegawa, col. 26, lines 42-44).  
... photomask shown in FIG. 16(b), transparent auxiliary patterns 5 were disposed at the positions P2 and P3 so as to be separated from the centers of the main patterns 4 by an equal distance S. The distance S was set at 0.65  $\mu\text{m}$ ; however, it is not limited thereto. The same effect can be obtained when the distance S satisfies the relationship of  $S=s\lambda/\text{NA}$ , .... (Hasegawa, col. 26, line 66-col. 27, line 5).

As shown, the Hasegawa reference appears to be entirely silent regarding any disclosure, teaching or suggestions of “guard rings” or “intersections of guard rings” as recited in Applicants’ invention as presently claimed in independent claims 1, 7, 15, and 19, and respective claims 2, 3, 5, 6, 8-10, 13, 14, 17, 18, 21, and 22 depending therefrom, which specifically recite *“identifying ... location where one diffraction ring ... intersects another diffraction ring ... and forming at least one sidelobe inhibitor ... at ... the ... location ...”* or *“forming a sidelobe inhibitor across at least one intersection where a diffraction ring from one of the elements intersects a diffraction ring from another ...”* or *“identifying the intersect as a location to place one of the sidelobe inhibitors, each of the sidelobe inhibitors being located to pass radiation in phase with the radiation passing through the elements”*.

Therefore, since the Hasegawa reference does not disclose, teach or suggest such claim elements, the Hasegawa reference cannot anticipate under 35 U.S.C. §102 or render obvious under 35 U.S.C. §103 Applicants’ invention as presently claimed in amended independent claims 1, 7, 15, and 19, and respective claims 2, 3, 5, 6, 8-10, 13, 14, 17, 18, 21, and 22 depending therefrom. Accordingly, such claims are allowable over the cited prior art and Applicants respectfully request that such rejections be withdrawn.

### 35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 5,700,601 to Hasegawa et al. in View of U.S. Patent No. 5,700,606 to Kobayashi et al.

Claims 4, 11, 12, 16, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hasegawa et al.(U.S. Patent No. 5,700,601) in view of Kobayashi et al. (U.S. Patent No. 5,700,606). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 4, 11, 12, 16, and 20 are improper because the elements for a prima facie case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claims limitations.

Regarding claim 4 (depending from amended independent claim 1), claims 11-12 (depending from amended independent claim 7), claim 16 (depending from amended independent claim 15), and claim 20 (depending from independent claim 19), Applicants have amended independent claims 1, 7, and 15 to include claim limitations not taught or suggested in the cited references.

Applicants herein sustain the above-proffered arguments relating to lack of teaching or suggestion in the Hasegawa reference of “*identifying ... location where one diffraction ring ... intersects another diffraction ring ... and forming at least one sidelobe inhibitor ... at ... the ... location ...*” or “*forming a sidelobe inhibitor across at least one intersection where a diffraction ring from one of the elements intersects a diffraction ring from another ...*” or

*“identifying the intersect as a location to place one of the sidelobe inhibitors, each of the sidelobe inhibitors being located to pass radiation in phase with the radiation passing through the elements”* as claimed by Applicants. The Office Action cites the Kobayashi reference for teaching or suggesting “patterned halftone film with an overlying light-shielding pattern at a position from which a sidelobe would be formed (the light-shielding pattern functions to prevent, inhibit, suppress, or mitigate a sidelobe)”. (Office Action, p. 12). The Kobayashi reference appears to teach or suggest identifying “sidelobe inhibitor” locations and then placing “**blocking inhibitors**” at those locations which is in distinct contradiction to Applicants’ claimed invention including sidelobe inhibitors located to *pass radiation* in phase with *the radiation passing through the elements*. It should be apparent that the calculation or determination of a location for an inhibitor for “**blocking radiation**” would be very different from a calculation or determination of a location for an inhibitor located to “*pass radiation*” therethrough.

The Examiner is respectfully reminded that there must be a **basis in the art for combining or modifying references**. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). See also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (holding that “although a prior art device may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.”). Additionally, “it is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teaching of the prior art so that the claimed invention is rendered obvious . . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” In re Fritch, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992).

Therefore, such references either individually or in any proper combination, cannot render obvious under 35 U.S.C. §103 Applicants’ invention as presently claimed. Accordingly, Applicants respectfully request the rejection of claims 4, 11, 12, 16, and 20 be withdrawn.

Furthermore, the nonobviousness of independent claims 1, 7, 15, and 19 preclude a rejection of claims 4, 11, 12, 16, and 20 which respectively depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. See

In re Fine, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to independent claims 1, 7, 15, and 19 and claims 4, 11, 12, 16, and 20 which depend therefrom.

**Double Patenting Rejection Based on U.S. Patent No. 6,807,519 to Stanton in View of U.S. Patent No. 5,700,601 to Hasegawa et al.**

Claims 1 through 3, 5 through 10, 13 through 15, 17 through 19, 21, and 22 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 through 4, 6 through 12, 14 through 18, 20, 22, 24, 25, 35 through 38, and 43 through 46 of Stanton (U.S. Patent No. 6,807,519) in view of Hasegawa et al. (U.S. Patent No. 5,700,601).

Applicants acknowledge the obviousness-type double patenting rejection and respectfully request that the examiner hold the requirement for a terminal disclaimer in abeyance and reconsider the obviousness-type double patenting rejection after examination on the merits of all claims in the present application. At that point, if the Examiner still believes an obviousness-type double patenting rejection is appropriate, Applicants will reconsider filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c).

**Double Patenting Rejection Based on U.S. Patent No. 6,807,519 to Stanton in View of U.S. Patent No. 5,700,601 to Hasegawa et al. and Further in View of U.S. Patent No. 5,700,606 to Kobayashi et al.**

Claims 4, 11, 12, 16, and 20 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 through 4, 6 through 12, 14 through 18, 20, 22, 24, 25, 35 through 38, and 43 through 46 of Stanton (U.S. Patent No. 6,807,519) in view of Hasegawa et al. (U.S. Patent No. 5,700,601), as discussed above, and further in view of Kobayashi et al. (U.S. Patent No. 5,700,606).

Applicants acknowledge the obviousness-type double patenting rejection and respectfully request that the examiner hold the requirement for a terminal disclaimer in abeyance and

reconsider the obviousness-type double patenting rejection after examination on the merits of all claims in the present application. At that point, if the Examiner still believes an obviousness-type double patenting rejection is appropriate, Applicants will reconsider filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c).

**Provisional Double Patenting Rejection Based on U.S. Patent Application Publication No. 2005/0049839 to Stanton in View of U.S. Patent No. 5,700,601 to Hasegawa et al.**

Claims 1 through 3, 5 through 10, 13 through 15, 17 through 19, 21, and 22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 51 through 61 of Stanton (copending U.S. Patent Application Publication No. 2005/6,807,519) in view of Hasegawa et al. (U.S. Patent No. 5,700,601), as discussed above.

Applicants acknowledge the obviousness-type double patenting rejection and respectfully request that the examiner hold the requirement for a terminal disclaimer in abeyance and reconsider the obviousness-type double patenting rejection after examination on the merits of all claims in the present application. At that point, if the Examiner still believes an obviousness-type double patenting rejection is appropriate, Applicants will reconsider filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c).

**Provisional Double Patenting Rejection Based on U.S. Patent Application Publication No. 2005/0049839 to Stanton in View of U.S. Patent No. 5,700,601 to Hasegawa et al.**

Claims 4, 11, 12, 16, and 20 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 51 through 61 of Stanton (copending U.S. Patent Application Publication No. 2005/6,807,519) in view of Hasegawa et al. (U.S. Patent No. 5,700,601), as discussed above, and further in view of Kobayashi et al. (U.S. Patent No. 5,700,606), as discussed above.

Applicants acknowledge the obviousness-type double patenting rejection and respectfully request that the examiner hold the requirement for a terminal disclaimer in abeyance and reconsider the obviousness-type double patenting rejection after examination on the merits of all claims in the present application. At that point, if the Examiner still believes an obviousness-type double patenting rejection is appropriate, Applicants will reconsider filing a terminal disclaimer to obviate the double patenting rejections in compliance with 37 CFR § 1.321 (b) and (c).



**CONCLUSION**

Claims 1 through 22 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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